DIVERSITY AND LONG-TERM CHANGES IN THE BRYOZOAN FAUNA OF THE HINDER BANKS, BELGIUM

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The Hinder banks rise about 25m above the seafloor and are about 20km long. Gravel fields are located in the gullies between the sand banks. The sand banks are characterized by large transversal sand waves. In a transitional zone, patches of gravels are present between large sand waves. The gravel field along the south-eastern flank of the Westhinder bank once hosted large flat oyster banks, which were destroyed by oyster dredgers in 1873. Nevertheless the samples of Gustave Gilson taken between 1900 and 1910 still reveal a very rich biodiversity on the Hinder Banks. Due to increased trawling, Gilson recommended in 1921 to protect gravel habitats. After the First World War, direct impacts to offshore gravels increased subsequently to the introduction motorized bottom trawling. After the collapse of herring in 1960, beam trawling was used to catch flatfishes with increasingly powerful ships. Continuous disturbance of the bottom has a devastating impact on erect growing fauna. Erect growing bryozoans like *Flustra foliacea*, *Electra pilosa*, *Alcyonidium* sp., *Bugula flabellata* and *Vesicularia spinosa* used to be abundant in Gilson's time, nowadays erect colonies are rare. Only sheltered areas, where the beam trawl hops over the hill and can not reach the gravel zone, host more and larger specimens. Encrusting bryozoans e.g. *Schizomavella teresae*, *Membranipora tenuis*, *Conopeum reticulum*, *Aspidelectra melolontha* and *Electra pilosa* are now dominant on gravel. In 2005 the Hinder Banks were re-sampled with a 2m beam trawl (Houziaux *et al.*, 2008). Up to 21 bryozoan species were found on gravel locations, covering large parts of the substratum. Surprisingly, the greatest diversity of bryozoans occurs on empty shells on sandbanks with up to 71 species per location. This study revealed 31 species new for the Belgian fauna. A great amount of species that are typically reproducing at small colony size as an adaptation to short survival on small unstable substrata, are added to the Belgian list. *Escharella gilsoni* and *Escharoides bishopi* described from the Kwintenbank (De Blauwe, 2006) are found again and probably some other species new to science are discovered. The campaign shows that some species well known from the English Channel are protruding in the southern bight of the North Sea. The presence of *Distansescharella seguenzai*, *Puellina nana* and others show some resemblances with the fauna in the Rias in northern Spain. Thousands of shells in the Gilson collection still have to be screened to determine long-term changes in the bryozoan fauna on shell debris.

References

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